PENNSYLVANIA
PUBLIC UTILITY COMMISSION
Harrisburg, PA 17105-3265

Public Meeting held November 18, 2004

Commissioners present:

Wendell F. Holland, Chairman
Robert K. Bloom, Vice Chairman
Glen R. Thomas
Kim Pizzingrilli

Advance Notice of Proposed Rulemaking Regarding Small Generation Interconnection Standards and Procedures

Docket No. L-00040168

ADVANCE NOTICE OF PROPOSED RULEMAKING ORDER

BY THE COMMISSION:

Today, the Commission is initiating an Advance Notice of Proposed Rulemaking (ANOPR) concerning small generation interconnection standards and procedures in order to standardize the way in which small generation connects to the distribution grid. As discussed below, the Commission is requesting comments on these standards and procedures. After receiving and considering comments, the Commission will then issue a Notice of Proposed Rulemaking (NOPR).

The Commission will achieve several goals with this rulemaking, including the following: (1) eliminate unnecessary barriers to entry in the distributed generation market; (2) promote distributed generation in order to provide peak demand responsiveness; (3) enhance grid reliability; (4) increase transparency in the interconnection process; (5) create uniformity and thereby ease the difficulty presented

by a patchwork of different procedures; and (6) lower the overall cost of locating and placing distributed generation across the Commonwealth.

The Commission began examining small generation interconnection standards and procedures on January 24, 2001, under Docket No. M-00011450, when the Commission established an internal Interconnection Working Group (IWG). The IWG focused on studying the models of other jurisdictions and organizations, as well as identifying the possible benefits of mandating a uniform set of interconnection procedures. The Commission also charged the IWG with considering whether unnecessary barriers impede distributed generation from interconnecting to the grid, and to the extent that such barriers exist, to recommend methods for eliminating them.

The IWG met several times, but temporarily and voluntarily suspended its work in the Spring of 2001 because the Federal Energy Regulatory Commission (FERC) issued an ANOPR on the standardization of generation interconnection agreements and procedures. FERC subsequently released a NOPR on Small Generation Interconnection Standards in July 2003. Thereafter, the Commission reactivated the IWG in the Fall of 2003.

The IWG identified the lack of standardized interconnection procedures and requirements as one of the primary regulatory barriers for distributed generation. Historically, each utility implements its own interconnection procedures and standards in order to address concerns unique to its own system. These concerns focus primarily on safety and reliability, in other words, the protection of utility personal, equipment, and system coordination. However, the utilities may have a conflict of interest with regard to facilitating distributed generation to the extent that distributed generation competes with services offered by the utility and imposes additional risks and costs.

While the Commission recognizes that the utilities' concerns are important and reasonable, the Commission must also consider the impact varied and disparate interconnection procedures have on distributed generation. The lack of standardization causes distributed generation developers to contend with different rate structures, customer electric and thermal loads, and other utility specific factors that make economic decision making and planning difficult. Uniform standards in Pennsylvania, and likewise the region, would facilitate entry into the market because it would ensure that manufacturers and developers are looking at consistent interconnection requirements and procedures.

Because of the IWG's work in identifying the issues described above, the Commission is ready to move forward by formally obtaining input from interested parties as the Commission begins to develop our own interconnection procedures.

The Commission is aware of efforts recently completed or currently underway in multiple forums, including, among others, New York, New Jersey, Texas, FERC, the National Association of Regulatory Utility Commissioners (NARUC), and PJM Interconnection L.L.C. (PJM). The Commission notes that New York Public Service Commission (NY PSC) has already established interconnection procedures for distributed generation. The NY PSC's requirements provide for a twelve step process split between three sizes of generation: 15 kilowatts (kW) or less, 15 kW to 300 kW, and 300 kW to 2 MW. For project 15 kW or less, the NY PSC's framework provides for simplified technical requirements, including streamlined procedures for generating equipment that meets Underwriters Laboratories (UL) Standard 1741.[1] The NY PSC's procedures also provide for simplified verification testing requirements for single-phase inverter-based systems and a waiver of $350 application fee.

[1] The Commission notes that the NY PSC did not adopt UL 1741 verbatim, it requires certain other standards to be met, including IEEE C37.90.1 and other requirements.

For facilities over 15 kW and up to 300 kW, the NY PSC's requirements provide: (1) specific requirements for interconnection studies (to determine what impact the distributed generating facility will have on the utility network), including a potential exemption from study requirements for systems under 50 kW on a single-phase line or 150 kW on a three-phase feeder; (2) potential requirements for dedicated transformers at the utility's discretion, but only after the utility provides the customer with specific written justification for the request; and (3) streamlined procedures for equipment that has been type tested or certified. For projects over 300 kW and under 2 MW, the NY PSC's procedures provide for extended periods of time to move from one step to the next, such as 15 business days to conduct a Preliminary Review of the project instead of 5 business days for other projects. The NY PSC's procedures also require more detailed technical information to be provided to the utility. Other features of the NY PSC's model common to all three sizes include a standardized contract for interconnection and certain operating requirements such as providing a 24 hour phone contact for the generator. Case 02-E-1282, *Order Modifying Standardized Interconnection Agreements* (issued November 17, 2004) (amending Case 94-E-0952, *Competitive Opportunities Regarding Electric Service*, Opinion No. 99-13 (issued December 31, 1999)).

The New Jersey Board of Public Utilities (NJ BPU) updated its own set of interconnection procedures on September 13, 2004. *Adopted Amendments: N.J.A.C. 14:4-9 (Net Metering and Interconnection Standards for Class I Renewable Energy Systems)*, Docket No. EX 03100795 (Filed September 13, 2004). The NJ BPU's model sets forth net metering and interconnection rules designed to standardize the interconnection process. For distributed generation under 2 megawatts (MW), the NJ BPU's procedures require Electric Distribution Companies (EDCs) to offer net metering to residential and small commercial customers, on the customer's side of the meter. The NJ BPU's procedures also require EDCs to develop and file tariffs for net metering and requires customers to use bi-directional meters. Regarding interconnection procedures, New Jersey splits the process into three categories, Level 1 (simplified), Level 2

(expedited), and Level 3 (standard). The Level 1 process is used to connect inverter based customer generator facilities that have a power rating of 10 kW or less, and that meet certain certification requirements. The Level 2 process is used for generation of 2 MW or less and which further meets Institute of Electric and Electronic Engineers Standard 1547 (IEEE 1547) and/or UL 1741. The Level 3 process is used for generation that does not meet the criteria for either Level 1 or Level 2. New Jersey also requires EDCs to designate a single point of contact for distributed generation customers. New Jersey believes that its procedures will increase the reliability of the grid, enhance security, promote economic development and diversify the resources used to produce electricity.

The Texas Public Utility Commission (TX PUC) likewise adopted an interconnection model in 1999. The interconnection process evolved over time in Texas, with the following goals in mind:

> [T]he commission's objectives are to clearly state the terms and conditions that govern the connection and operation of small power generation and to establish technical requirements to promote the safe and reliable operation of distributed generation resources . . . . Implementation of these rules (1) promotes the use of distributed resources in order to provide electric system benefits during periods of capacity constraints; (2) enhances both the reliability of electric service and economic efficiency in the production and consumption of electricity; and (3) provides customers greater opportunities to control the price and quality of electricity within their facilities."

Rules for Interconnection of Distributed Generation, Project No. 21220 (Order Entered November 23, 1999), *amended by P.U.C. Rulemaking to Amend Existing Rules 25.211 and 25.212, Review and Develop a Standard Interconnection Agreement and Terms and Conditions of the Tariff*, Project No. 22540 (Order entered September 22, 2000). Some of the features of the TX PUC's model include the following: (1) a "uniform agreement" that covers, among other things, a scope agreement, the parties' responsibilities, and the utility's right to inspect equipment; (2) an interconnection process calibrated to the

technical requirements of each project; (3) pre-certification of distributed generation equipment; and (4) the utility retains the right to disconnect under certain circumstances. *Id.*

Among non-state entities, in July of 2003, the FERC issued a NOPR on Small Generation Interconnection Standards. *Standardization of Small Generator Interconnection Agreements and Procedures; Notice of Proposed Rulemaking*, 104 FERC ¶61,104 (July 24, 2003). The FERC has been clear about the purpose of its proposed interconnection rule for small generators:

- to facilitate the interconnection of small generators with a rule designed to accommodate their needs,
- to lower wholesale prices for customers by increasing the number and variety of new generation resources that compete in the wholesale electricity market,
- to reduce interconnection time and costs for both small generators and transmission providers,
- to prevent undue discrimination whereby a transmission provider may show favoritism to its own generation or that of an affiliate,
- to preserve the reliability of the transmission system,
- to increase electric energy infrastructure, and
- to facilitate the development of non-polluting alternative energy sources such as distributed generation.

Id. The FERC proposed interconnection rule applies to the interconnection of generators no larger than 20 MW. The rule applies to all interconnections to facilities subject to a transmission provider's open access transmission tariff at the time an interconnection request is made. The rule includes pricing policies similar to that contained in the FERC large generation interconnection rule. To facilitate rapid interconnection, the rule includes super-expedited procedures for generators less than or equal to 2 MW

connecting at low voltage, expedited procedures for generators between 2 MW and 10 MW connecting at low voltage, and accelerated

In October 2003, NARUC also adopted standardized interconnection procedures. *Model Interconnection Procedures and Agreement for Small Distributed Generation Resources* (October, 2003), http://www.naruc.org/associations? 1773/ files/dgiaip_ oct03.pdf. The NARUC model splits distributed generation projects into two process categories. The first is a "super expedited" process for interconnection of small generation equipment that passes certain technical screens. The second is a regular process for the remaining generation that cannot be super expedited because it does not meet certain designated screening criteria. Prominently featured in the model are a series of deadlines at regular intervals that clearly indicate whether the project is properly moving forward. On the super expedited track, the NARUC model includes a single point of contact with the utility, a standardized application, a site control requirement, and a requirement that the generator and utility meet in the event that problems are encountered and it appears the project may not be suitable for the super expedited track. For projects not meeting the requirements for the super expedited track, the model features a scoping meeting, feasibility study, impact study, and facilities study, among other provisions. Notably, the NARUC model maintains clear deadlines and establishes which party has the burden of moving forward with the next step in the process.

Finally, PJM is in the process of adopting standardized interconnection technical requirements. In January of 2004 PJM established a Small Generation Interconnection Working Group as part of an effort to develop more standardized interconnection requirements for small generators. PJM is focused on centering its technical requirements on IEEE 1547, and further on developing an equipment pre-certification process that is uniform throughout PJM's control area.

PJM is interested in working with the states in its footprint in order to ensure that a single standard is adopted, which in its view would further strengthen the economic viability and benefits of distributed generation. Generally, the Commission is supportive of PJM's efforts and believes there is significant value in pursuing a regional approach. Similarly, the Commission also supports the efforts of the Mid-Atlantic Distributed Resources Initiative (MADRI), an organization established to develop regional policies and market-enabling activities to support distributed generation and demand response in the Mid-Atlantic region.[2]

As the brief summaries of the above interconnection processes make clear, there are many important issues the Commission must consider. Therefore, the Commission is interested in soliciting comments from all interested parties. The comments should touch on both technical requirements as well as interconnection procedures, including procedures that reflect "best practices." Comments should also indicate the appropriate generation size suitable for small generation interconnection standards and procedures. The Commission is also interested in comments that address whether there are issues specific to Pennsylvania that require the Commission's attention.

Comments may be filed by any interested person or on behalf of an entity, and each comment should clearly indicate which of the above referenced models is preferable and whether the model requires changes because of issues that are specific to Pennsylvania.

Due to the comprehensive nature of a rulemaking and the complexity of the subject matter, interested parties will be given 60 days from the date of publication in the *Pennsylvania Bulletin* to submit comments. The Commission is committed to moving

[2] The following entities are MADRI members: the public utility commissions of Delaware, District of Columbia, Maryland, New Jersey and Pennsylvania, PJM, the U.S. Department of Energy's Mid-Atlantic Regional Office and Office of Electric Transmission and Distribution and the U.S. Environmental Protection Agency.

this rulemaking forward in a timely fashion. Because the comment period is lengthy, no extensions of time will be granted for filing comments. **THEREFORE;**

IT IS ORDERED:

1. That a rulemaking proceeding is hereby initiated at this docket to consider adopting standardized interconnection standards and procedures for small generation.

2. That an Advance Notice of Proposed Rulemaking regarding standardized interconnection procedures for small generation be published in the *Pennsylvania Bulletin*.

3. That interested parties shall have 60 days from the date of publication in the *Pennsylvania Bulletin* of the Advance Notice of Proposed Rulemaking to file written comments.

4. That comments should focus on the issues as described in this Order, including the relative merits of existing standardized interconnection procedures for small generation such as those referenced above, and further, whether Pennsylvania presents unique issues that require the models to be changed before being adopted.

5. That interested parties should file an original plus fifteen copies of each comment to the Secretary, Pennsylvania Public Utility Commission, P.O. Box 3265, Harrisburg, PA 17105-3265. The Commission's contact person is Assistant Counsel W. Blair Hopkin, (717) 783-6152.

BY THE COMMISSION:

James J. McNulty
Secretary

(SEAL)
ORDER ADOPTED: November 18, 2004
ORDER ENTERED: November 19, 2004